

SWBAT: contrast natural frequency and forced vibration

Jan 4-7:20 AM

Concept Sheet

~ 7 rows when we're done...

We'll fill in two terms (rows) today.

Concept	Meaning	Sym- bol	Units	Picture
FREQUENCY	HOW MANY PER UNIT OF TIME $\text{FREQ} = \frac{\#}{\text{TIME}}$	f $f = \frac{1}{T}$	hertz $\text{Hz} = \frac{1}{\text{sec}}$	
PERIOD	HOW MUCH TIME FOR ONE PERIOD $\text{PERIOD} = \frac{\text{TIME}}{\#}$	T $T = \frac{1}{f}$	seconds sec.	
TRANSVERSE	WHEN THE MEDIUM VIBRATES ACROSS THE DIRECTION THE WAVE TRAVELS.			
LONGITUDINAL	WHEN THE MEDIUM VIBRATES ALONG THE DIRECTION THE WAVE TRAVELS.			
AMPLITUDE	HOW FAR FROM THE MIDDLE.	A	meters m	
WAVELENGTH	HOW FAR FOR ONE "BACK & FORTH"	λ	meters m	
WAVE SPEED	DISTANCE OF A WAVE TIME OF A WAVE	v	meters second m/s	

Feb 18-6:50 AM

Welcome!!!

SECA Physics
Monday 28 April 2014

H. Leslie Grebe

- * Pick up:
 - half sheet
 - slip of paper (for later)

Centering

Opening Questions:

What makes different things sound different?

Sep 7-7:04 AM

Tap things and make observations about sounds:

How are they different?

- Make some notes on your own **AT LEAST 5**
- Discuss thoughts with others at your table **WORDS**
- Share with whole class

STRETCHED / TIGHT

DECIBEL — LOUD / SOFT — VOLUME

**↳ FORCE
FREQUENCY — PITCH
RHYTHM / BEATS**

**SHARPNESS
TONE**

Apr 21-7:45 AM

Pennies:

Sort them by sound?

Observations? Theories?

OLDER VS. NEWER
MATERIAL

1982 95% Cu | Zn CORE
5% Zn | Cu COATING

Apr 12-7:13 AM

Natural Frequency:

The frequency an *elastic* object vibrates most easily

Harder objects are more elastic

Tuning Forks -- labeled with their natural frequency

Strike only with erasers!

- listen **QUIET**
- touch it gently to your cheek - **TICKLES**
- touch it to the table

Observations? **256 C 288 D**
384 G

Apr 21-9:24 AM

Acoustic and Electric Guitar

ACUSTIC
Raise your hand if you can hear the note.

TUNING FORK

ON GUITAR

ALL

VS.

ELECTRIC

(IN AIR)

NOT ON GUITAR

Forced Vibrations: Table and guitar body are being forced to vibrate at another objects natural frequency

Which will vibrate longer?

May 3-7:50 AM

Daily 3 Questions

CP: Standing Wave worksheet was due!

- * Every day except test/project days
- * 3 Questions on the topics of the day
- * Main source of daily points
- * I am happy to give credit when I have no concerns about someone giving or getting help with the answers.

Your can't get your points if you don't have your NAME!!!

Name	Period
1.	
2.	
3.	

Sep 9-7:32 AM

1) The frequency an elastic object vibrates most easily.

- ☒ A) Natural Frequency
- ☐ B) Forced Vibration
- ☐ C) Interference

2) When an object is forced to vibrate at a different objects natural frequency

- ☐ A) Natural Frequency
- ☒ B) Forced Vibration
- ☐ C) Interference

3) The label on a tuning fork tells you its

- ☒ A) Natural Frequency
- ☐ B) Forced Vibration
- ☐ C) Interference

Apr 25-7:25 AM